

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **03-174740**

(43)Date of publication of application : **29.07.1991**

(51)Int.Cl. H01L 21/76
H01L 21/331
H01L 29/73

(21)Application number : **02-175527**

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(22)Date of filing : **03.07.1990**

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(30)Priority

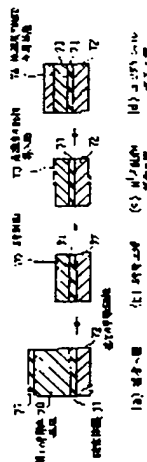
Priority number : **01237457** Priority date : **13.09.1989** Priority country : **JP**

(54) MANUFACTURE OF SEMICONDUCTOR SUBSTRATE HAVING DIELECTRIC ISOLATION STRUCTURE

(57)Abstract:

PURPOSE: To improve the manufacturing precision of semiconductor substrates by the step of bonding the respective mirror-faces of the first and second semiconductor substrates with the interposol of a dielectric film deposited on one face which is mirror-polished, of grinding either face down to a predetermined thickness, of introducing high dopant into the ground face, and of overlaying it with a low-doped semiconductor layer.

CONSTITUTION: An N-type silicon substrate 70 one face of which is mirror-polished is both-faced with silicon oxide layers (dielectric layers) 71. With one face of a second N-type silicon substrate 72 mirror-polished, both substrates are joined with the mirror-polished faces face to face: these substrates are bonded by heat treatment. The first silicon substrate 70 is ground, and the ground face is further mirror-polished. Dopant is diffused into the first silicon substrate 70 with the solid diffusion source of antimony oxide to form a high-doped N-type silicon layer 73, and then a low-doped N-type silicon layer 74 is epitaxially grown from top of that layer 73. This process can improve the manufacturing precision of semiconductor substrates by uniformizing the film thickness and the resistance of circuitry-forming layers.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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